



AIR-CONDITIONING
& REFRIGERATION
INSTITUTE

Representing Manufacturers
of Heating, Ventilating,
Air-Conditioning and
Refrigeration Products

November 30, 2004

Mr. Michael Martin
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

Re: Docket No. 04-AAER-1

Dear Mr. Martin:

The Air-Conditioning and Refrigeration Institute (ARI) submits these written comments on the California Energy Resources Conservation and Development Commission (CEC) proposed amendments to the appliance efficiency regulations Title 20.

ARI is a North American trade association representing the manufacturers of over 90% of U.S. produced air conditioning and commercial refrigeration equipment. ARI represents a domestic industry of approximately 200 air conditioning and refrigeration companies, employing approximately 150,000 men and women in the United States. The total value of member shipments by these companies is over \$30 billion annually. We have reviewed the informal staff draft "15-Day Language" of the appliance efficiency regulations would like to make the following comments:

Commercial Ice makers

Definitions

The definition for "commercial ice maker" is too broad. We recommend that language be added to define commercial ice makers as machines that produce cube type ice with capacities between 50 and 2500 lbs per 24 hours when tested at ARI rating conditions. This language would exclude flakers, small residential ice machines and industrial ice makers from the regulation.

Test Procedures

The proposed regulations make reference to ARI standard 810-2000 which has been replaced since 2003 by ARI 810-2003. We request that CEC adopt the 2003 issue of ARI standard 810.

In addition we feel that the added requirement that limits the rated capacity within 5% of the tested value is inappropriate and should be deleted. This requirement if adopted would penalize manufacturers for "over achieving" their ratings and/or manufacturers who rate their products conservatively. Never in the history of energy efficiency regulations were manufacturers penalized for manufacturing products with better ratings than advertised.

We understand that CEC is proposing this requirement out of fear that manufacturers would intentionally underrate their products just to meet the proposed minimum efficiency standards. This fear is unfounded. Because of the fierce competition that exists in the market place, ice maker manufacturers have no incentives to underrate their products. On the contrary, they have more incentives to overrate products, and in particular the harvest rate to beat the competition. However, overrating should not be an issue for CEC since the ARI certification program ensures that products are not overrated.

We believe that market forces alone are more than enough to prevent a potential “manipulation” of the harvest rate by the industry just to meet the California standard and consequently we urge CEC to delete this requirement.

Effective Date

In light of the stringency of the proposed standards, the January 1, 2007 and 2008 effective dates do not provide enough time for manufacturers to re-design their products and re-tool their factories. ARI respectfully request that the effective date be postponed to January 1, 2010.

Walk-in Coolers (Refrigerators) and Freezers

ARI does not believe that prescribing prescriptive standards is the best option to reduce the energy consumption of walk-ins. We are opposed to prescriptive standards because they are incompatible with innovations. The design of walk-ins or any other equipment for that matter should be left to manufacturers. The CEC should be concerned with performance standards only. In addition, there are several issues with the proposed prescriptive standards that need to be seriously addressed by CEC. Some of the issues are as follows:

Availability of ECM Motors

There are serious reasons to believe that ECM motors are not available in all product sizes, power requirements, voltages and phases. In addition, the vast majority of ECM motors currently available are produced by one single manufacturer. This requirement would likely create a monopoly as well as supply and availability issues.

Equivalent Efficiency Specification

Sections 4 (i) (III) and (IV) of the proposed regulation require the use of electronically commutated motors or other motors of the same efficiency without specifying what that efficiency is. How are manufacturers supposed to select motors equivalent in efficiency to ECM motors when the efficiency of the ECM is not stated, and when there is no test method specified under which these motors need to be tested and rated?

Cost Benefit Analysis

The cost benefit analysis is based on outdated data from an Arthur D. Little report that has a number of deficiencies. For example, the fan power consumption was overestimated by assuming larger motors (5 hp) instead of the typical size of 2.5 hp, and motors were assumed to be of the shaded pole type

(least efficient) while most are of the permanent split capacitor type (which are more efficient). In addition, the ECMs are assumed to last the life of the equipment while in reality some will be replaced due to failures. Correcting for these deficiencies will considerably increase the payback of ECMs and will make significantly less attractive.

Consequently, we strongly recommend that the CEC postpone the implementation of a prescriptive standard for walk-ins until the above mentioned issues are properly addressed.

Very Large Packaged Air-Cooled Commercial A/C (240-760 kBtu/h)

ARI does not support the two-tiered efficiency standards proposed by the commission and instead support a 10 EER (9.8 EER for equipment with a gas heating element) minimum standard effective January 1, 2010 for the following reasons:

1. The economic analysis used to justify the efficiency levels is flawed in many respects. The incremental cost of the equipment has been severely underestimated, and so has the discount rate. The cost estimated by the CEC contractor has been extrapolated from a cost analysis done by the Department of Energy (DOE) on much smaller packaged air conditioners. It is well known that cost figures cannot be extrapolated and are not a linear function of the cooling capacity. To ARI's knowledge, the only cost analysis ever conducted on this type of equipment size was done by ASHRAE 90.1. According to ASHRAE, the incremental cost at 10 EER was estimated at \$2,724, which is over 5 times the cost estimated by the CEC contractor. Regarding the discount rate, ARI believes that the 3% used by CEC is unrealistically low and recommends that CEC look at the analysis conducted by DOE for the commercial air conditioning rulemaking. DOE has estimated the discount rate at 6.1%.
2. The proposed effective date of 2006 does not allow sufficient time for manufacturers to redesign their products and retool their production lines. Nor would it be technically and financially feasible for manufacturers to redesign products and retool production lines twice in 6 years (first in 2006 and then in 2010). Given that the HVAC industry will go through significant product redesign due to the phase-out of R-22 in 2010, a logical effective date for any new standards should be January 1, 2010, and nothing sooner.
3. A 0.2 EER deduction should be allocated for equipment with a heating element other than electric resistance. The 0.2 EER deduction is necessary to account for additional losses (pressure drops) resulting from the gas heating element. This deduction in EER has been used by ASHRAE 90.1 since at least 1989. In addition, it is also used by the CEC in its Title 20 regulations for water-cooled and evaporatively cooled products and in Title 24 for all air-cooled products above 65,000 btu/h (including products above 240,000 btu/h). We urge CEC to be consistent with its own regulations and to adopt the 0.2 EER deduction for products above 240,000 btu/h as well.

Residential Air Conditioners and Heat Pumps

Table C-2 of Section 1605.1 is inconsistent with the Department of Energy (DOE) final rule as published in the January 22, 2001¹ and August 17, 2004² issues of the Federal Register. The Table should make reference to the minimum efficiency standards for through-the-wall and space constrained products. In addition, on October 14, 2004, DOE's Office of Hearings and Appeals (OHA) announced that the Application for Exception filed by manufacturers of Small Duct High Velocity Systems (SDHV) seeking exception relief from the 13 SEER/7.7 HSPF minimum federal energy efficiency standard has been granted. Effective January 23, 2006, SDHV systems would be required to meet a minimum efficiency standard of 11 SEER/6.8 HSPF.

Commercial Refrigerators/Freezers

ARI has concerns with many provisions of the proposed amendments pertaining to commercial refrigeration products as follows:

Cabinets Without Doors

The proposed standard for cabinets without doors is totally arbitrary and is technically invalid. How could CEC technically justify an efficiency standard at the same level as reach-in cabinets with transparent doors, when the system without door is inherently less efficient? In addition, how could CEC promulgate minimum efficiency standard at a level that cannot be met by the products currently available on the market (there are no products at these levels in the CEC database). By proposing these minimum energy efficiency standards, CEC is in fact attempting to ban the sale of commercial refrigerator/freezer without doors in California. This is against the Warren-Alquist Act which requires CEC to demonstrate that the proposed standards are cost-effective, feasible, and attainable.

ARI recommends that energy standards for this category be delayed while maintaining the listing requirement until such time that sufficient data is available to set appropriate standards.

Pull Down Cabinets

The CEC proposed standards lumps all types of reach-in cabinets together without taking into account that some beverage merchandisers are designed for rapid pull down temperatures. These beverage merchandisers have oversized compressors and as such are not as efficient. We ask that CEC sets a separate product class for beverage merchandisers specifically designed for pull down temperature applications as follows:

Refrigerators with transparent doors:	0.126V + 3.51 kWh/day
Freezers with transparent doors:	0.788V + 4.30 kWh/day

¹ 66 FR, No.14, Page 7170

² 69 FR, No. 158, Page 50997

In addition, equipment for pull down should be defined as those that can cool a cabinet by at least 4.3 degrees F/hour over a 12 hour period.

Ice Cream Cabinets

It is not clear to us why CEC is proposing minimum efficiency standards for ice cream cabinets with solid doors but opted not to regulate ice cream cabinets with transparent doors. This decision to regulate one class of product and not the other could have a negative impact on the sale of ice cream cabinet with solid doors in California. We recommend the CEC sets standards for both solid and transparent doors ice cream cabinets.

Low Temperature Freezers

ARI strongly recommends that an additional category of “Low Temperature Freezers” be added to the standard and defined as a freezer that operates at – 20°F and below. Energy standards should not be imposed at this time until sufficient data is collected to establish appropriate energy levels.

Test Procedures

Regarding the test procedures, we would like to bring to the attention of the CEC that ARI standard 1200 provides for the rating and testing of closed and open refrigerators and freezers. ARI 1200 makes reference to ASHRAE 72 and 117 for the test procedures of open and closed commercial refrigerators/freezers respectively. We urge CEC to adopt ARI 1200 as the test procedures for all commercial refrigerators and freezers.

Federal Preemption

We would like to remind CEC that all Title 20 regulations as they apply to “covered products” and “covered equipment” as defined by EPCA are expressly preempted by federal law. This was reinforced by the U.S. District Court for the Eastern District of California. However despite EPCA’s express preemption and the Court’s ruling, CEC is promulgating marking and information disclosure requirements for “covered products”. The proposed amendments to Title 20 do not address these fundamental flaws and do not resolve the issue of federal preemption. We urge CEC to comply with the court’s order.

We appreciate the opportunity to submit these comments. If you have any questions regarding this submission, please feel free to contact me.

Sincerely,



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